

Notice of Allowability

Application No.

10/775,543

Examiner

Marcos D. Pizarro-Crespo

Applicant(s)

SUNG, CHIEN-MIN

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 4/13/2005.
2. ☒ The allowed claim(s) is/are 1-22 and 37-39.
3. ☒ The drawings filed on 09 February 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 5/10/2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Application/Control Number: 10/775,543 (Allowance)
Art Unit: 2814

Page 2

Attorney's Docket Number: 21154.CIP2

Filing Date: 2/9/2004

Claimed Priority Dates: 6/2/2003 (CIP of 10/453,469)
10/11/2002 (CIP of 10/270,018)

Applicant(s): Sung

Examiner: Marcos D. Pizarro-Crespo

DETAILED ACTION

This Office action responds to the amendment filed on 4/13/2005.

Election/Restrictions

1. Applicant's election without traverse of claims 1-22 and 37-39 in the reply filed on 4/13/2004 is acknowledged. Claims 23-36 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Acknowledgment

2. The amendment filed on 4/13/2005, responding to the Office action mailed on 3/17/2005, has been entered. The present Office action is made with all the suggested amendments being fully considered. Accordingly, pending in this Office action are claims 1-39.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

4. This application is in condition for allowance except for the presence of claims 23-36 to an invention non-elected without traverse. Accordingly, the application has been amended as follows:

In the claims:

Cancel claims 23-36.

Reasons for Allowance

5. The following is an examiner's statement of reasons for allowance:

None of the references of record shows or can be fairly combined to render obvious a diamond composite heat spreader comprising a diamond-containing material having a variable thermal conductivity gradient decreasing from a heat influx region to a heat exit region of the material. A special definition is given in the originally filed description to the term "heat exit region". See, e.g., pp.10/11.6-7, wherein "heat exit region" is clearly defined as a region of the diamond-containing material designed to correspond to a region of relatively low thermal conductivity. Hall (US 2002/0023733), a best reference, shows a diamond composite heat spreader **53** having a heat influx region **45** and a heat exit region **45** (see, e.g., fig. 5). Hall, however, fails to characterize the heat exit region as a region in the spreader having a relatively low thermal conductivity, nor does he shows a decreasing thermal conductivity gradient from the influx to the exit region of the spreader.

Art Unit: 2814

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nishibayashi (JP 09-312362), Chen (US 5096465), and Pender (US 6541115) show diamond composites comprising diamond particles and an interstitial material both forming a continuous diamond matrix.

8. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(703) 872-9306**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.

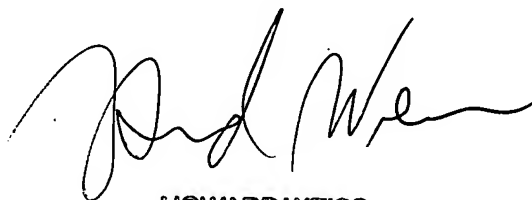
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Marcos D. Pizarro-Crespo** at **(571) 272-1716** and between the hours of 9:30 AM to 8:00 PM (Eastern Standard Time) Monday through Thursday or by e-mail via Marcos.Pizarro@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on (571) 272-1705.

Art Unit: 2814

10. Any inquiry of a general nature or relating to the status of this application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

11. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/77,706,707-712-722,E23.111	4/30/2005
Other Documentation: PLUS Analysis	4/30/2005
Electronic Database(s): EAST (USPAT, EPO, JPO)	4/30/2005



HOWARD WEISS
PRIMARY EXAMINER

Marcos D. Pizarro-Crespo

Patent Examiner

Art Unit 2814

571-272-1716

marcos.pizarro@uspto.gov